

### Listing of Claims

The listing of claims presented below replaces all prior versions and listings of claims in the application.

#### IN THE CLAIMS

Claims 1-10 (Cancel)

Claim 11. (Currently Amended) A method of screening using wild type fruit fly *Drosophila melanogaster* adults for detecting long-term brain plasticity inducing activities of a chemical agent comprising the steps of wherein the steps comprise:

- (a) ~~culturing~~ exposing wild type fruit fly *Drosophila melanogaster* adults in media ~~containing to~~ at least one neuroactive drug for about seven days,
- (b) measuring different ~~horizontal and vertical~~ locomotor activities ~~which are distance walked, height climbed, and climbing speed;~~ in flies of step (a),
- (c) identifying a specific alteration in ~~only one of the vertical a~~ locomotor activity activities in the flies of step (b) as characteristic of continuing effect of exposure to the neuroactive drug ,
- (d) continuing chronic exposure of the drug to flies of step (a) for 10 days followed by maintaining ~~shifting the flies in a~~ to drug free media for 30 days,
- (e) measuring ~~horizontal and vertical~~ locomotor activities, ~~as mentioned in step (b);~~ in flies of step (d), and,
- (f) identifying a specific alteration in ~~climbing speed; a vertical~~ locomotor activity, in flies of step (e) indicative of long term plasticity alteration ~~withdrawal from the neuroactive drug.~~

Claim 12. (Currently amended) The method of claim 11 wherein the vertical locomotor activity measured in step (e) ~~is~~ height climbed, distance walked and climbing speed.

Claim 13. (Currently amended) The method of claim 11 wherein the ~~vertical~~ locomotor activity ~~measured~~ detected as altered in flies in step (c) is climbing speed.

Claim 14. (New) The method of claim 11 wherein the locomotor activity measure in step (f) are distance walked, height climbed and climbing speed.

Claim 15. (New) The method of claim 11 wherein the locomotor activity detected as altered in flies in step (f) is climbing speed.